



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,078	11/22/2005	Yuji Ohashi	AOKI-0011	4738
7590 04/30/2008 Millen White Zelano & Branigan Arlington Courthouse Plaza 1 Suite 1400 2200 Clarendon Blvd Arlington, VA 22201			EXAMINER KAROL, JODY LYNN	
			ART UNIT	PAPER NUMBER
			1617	
			MAIL DATE	DELIVERY MODE
			04/30/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/527,078

**Applicant(s)**

OHASHI ET AL.

**Examiner**

JODY L. KAROL

**Art Unit**

1617

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 7-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-850)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 3/9/2005 and 5/23/2005

### **DETAILED ACTION**

This office action is in response to the Response to Election/Restriction filed 1/28/2008. Claims 1-22 are currently pending.

#### ***Priority***

1. This application is a 371 of PCT/JP03/11590 International filing date: 9/10/2003, which claims priority to Application No. 2002-264636 filed in Japan on 9/10/2002.

#### ***Information Disclosure Statement***

2. The information disclosure statements (IDS) filed on 3/9/2005 and 5/23/2005 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered. However, several of the references have not been considered because English language translations of the documents were not provided or readily available, and their relevance to the application has not been indicated.

#### ***Election/Restrictions***

3. Applicant's election **with** traverse of Group I, claims 1-6, drawn to a whitening agent comprising a crystalline molecular complex of hydroquinone or derivative thereof and a surfactant, and species election **with** traverse of hydroquinone and STAC in the reply filed on 1/28/2008 is acknowledged.

Applicant's traversal is on the grounds that the claims contain the same special technical feature, and as per PCT Rule 13.1, claims possessing a special technical relationship that are drawn to a product, a use of said product, and process of manufacture of said product will be considered to have unity of invention. This is not found persuasive because common technical feature among the claims, a crystalline molecular complex of hydroquinone or derivative thereof and a surfactant, is known in the prior art. For example, Ohashi et al. (JP 2001-302576 A) teaches a method of adjusting the evaporation rate of an aromatic comprising forming crystals of a molecular complex of an aromatic compound with a surfactant (see abstract). Ohashi et al. further teaches that acceptable aromatic compounds include a hydroquinone (see section [0018]). Thus, crystalline molecular complexes of hydroquinone and surfactants are known in the prior art, and unity of invention is considered to be lacking.

The restriction requirement is still deemed proper and is therefore made **FINAL**.

Upon further consideration, the election of species requirement is herein withdrawn.

Claims 7-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Accordingly, claims 1-6 are examined on the merits herein.

#### ***Specification***

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

Art Unit: 1617

requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

5. Claim 4 is objected to because of the following informalities: the surfactants STAC and LTAC are apparently misspelled. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Noguchi et al. ("Structures of Complex Crystals of Alkylammonium Salts with Aromatic Molecules," *Mol. Cryst. Liq. Cryst.*, 1996, Vol. 276, pgs 185-191).

Noguchi et al. teaches crystal structures of dodecyltrimethyl-ammonium chloride (DTAC) with hydroquinone (see page 186). Noguchi et al. further teaches that this complex is stable when allowed to stand in the atmosphere (see pages 190-191).

While Noguchi et al. does not explicitly state that the molecular complex improves the storage stability of a hydroquinone-containing whitening agent against heat, light, or oxygen, this property is inherent. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and

Art Unit: 1617

its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties the applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Since the prior art teaches the crystal complex of the surfactant DTAC with hydroquinone, the improved storage stability against heat, oxygen, and light is considered inherently present in the composition taught by Noguchi et al..

8. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipate by Ichikawa et al. ("Light and Oxygen Protective Properties of Materials Induced by Surfactant Molecular Complex Formation," *Journal of Colloid and Interface Science*, 228, 32-39 (2000)).

Ichikawa et al. teaches crystalline surfactant molecular complexes, such as hydroquinone with cetyltrimethylammoinium bromide (CTAB) (see page 33, Table 2). Ichikawa et al. further teaches that these complexes are resistant to UV light, (see page 36, Figure 4), oxygen, and heat (see page 37, Figures 8-9). Thus, all the limitations of the instant claims 1-4 are met.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al. (JP 2001-302576 A).

The instant claims 1-6 are directed to whitening agents comprising a hydroquinone or derivative thereof and a surfactant, such as hexadecyldimethylbenzylammonium chloride (CDBAC), wherein the molecular complex improves the storage stability of the hydroquinone-containing whitening agent against heat, oxygen, and light, while said hydroquinone is gradually released for sustained whitening effect.

Ohashi et al. teaches a method of adjusting the evaporation rate of an aromatic compound to impart a controlled release property, comprising forming crystals of the molecular complex of an aromatic compound with a surfactant (see abstract). Ohashi et al. further teaches that the surfactant molecule is preferably an alkyl trimethylammonium salt or an alkyl dibenzylammonium salt, wherein the alkyl group is selected from a hexadecyl radical, an octadecyl radical, a tetradecyl radical, a decyl radical, or a dodecyl radical to impart the desired stability (see page 3, sections [0013]-[0015]). Acceptable counter-ions include chlorine and bromine (see page 2, section [0011]). Ohashi et al. further teaches that the aromatic compound includes hydroquinone (see page 3, section [0018]).

Ohashi et al. does not explicitly teach a crystalline molecular complex of hydroquinone or a derivative thereof with a surfactant, or the specific herein claimed surfactants in the instant claims 1-4. Ohashi et al. also does not teach that complexes will have improved storage stability against heat, oxygen, and light.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to form a crystalline molecular complex of hydroquinone with a surfactant based on the guidance of Ohashi et al.

One of ordinary skill in the art would have been motivated to form the complex to impart a controlled release property to hydroquinone. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to select a surfactant from any one of the disclosed surfactants taught by Ohashi et al. which



Art Unit: 1617

includes CDBAC as claimed in the instant claims 4-6. One of ordinary skill in the art would have been motivated to do so to impart the desired stability.

While Ohashi et al. does not explicitly teach that the complexes would have improved storage stability against heat, oxygen, and light, it would have been obvious to one of ordinary skill in the art, that the complexes formed would have this property. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties the applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Since the prior art teaches the crystal complex of the surfactant DTAC with hydroquinone, it must necessarily have improved storage stability against heat, oxygen, and light.

### ***Conclusion***

No claims are allowed.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JODY L. KAROL whose telephone number is (571)270-3283. The examiner can normally be reached on 8:30 am - 5:00 pm Mon-Fri EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on (571) 272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

JLK

/San-ming Hui/  
Primary Examiner, Art Unit 1617